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NPOESS DATA EXPLOITATION TEAM CHARTER v.2

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Prepared by:

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National Environmental Satellite, Data, and Information Service (NESDIS)
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NOAA/NESDIS

i Abstract

This document describes the mission, structure, and scope of responsibilities of an organization that has been put in place to develop systems to produce satellite weather products derived from the data delivered to NOAA/NESDIS during the NPOESS era. The systems will disseminate these products to government users in agencies outside the Department of Defense and to civilian users.

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1. MISSION of NPOESS DATA EXPLOITATION

The NPOESS Data Exploitation (NDE) Project develops the systems that process input data from the NPP and NPOESS satellites to create weather products and distribute them to a variety of civilian customers. The NDE Team mission, therefore, is:

A. To identify and acquire new data processing and dissemination systems to ensure environmental data can be acquired, processed, distributed to users and archived during the NPOESS era, including:

- IPO Support
- Product generation from xDRs
- Reliability and Quality Assurance of NOAA products
- New and improved product definitions
- New and Improved product generation
- User system development and support
- Science data stewardship support and interface
- Data storage and retrieval support and interface
- Establishing relationships with external civilian users
- New and improved algorithms generation

B. To ensure NESDIS continues to meet existing user requirements and provides continuity of service during the transition from the current POES program to NPOESS

C. To maximize the risk reduction benefits made available by the NPOESS Preparatory Project (NPP)

D. To ensure NESDIS continues to provide enhanced satellite broadcast services including Search And Rescue Satellite Aided Tracking (SARSAT), Data Collection System (DCS) and Direct Readout (DRO)

2. NDE Project Accountability

2.1 Matrixed Organization

The NPOESS Data Exploitation (NDE) team is a matrixed organization with staff drawn, as needed, from many NOAA departments to participate in cross-functional teams. The teams will be formed to accomplish specific tasks in accordance with the NPOESS Data Exploitation Integrated Project Plan.

Overall responsibility for budget and project execution resides with NOAA's Office of Systems Development (OSD). Day-to-day management is the responsibility of a Project Manager who reports directly to OSD's Polar Programs Manager. (The dotted line in Figure 1 (below) indicates that the NDE project manager is the principal point of contact between NESDIS and the IPO.)

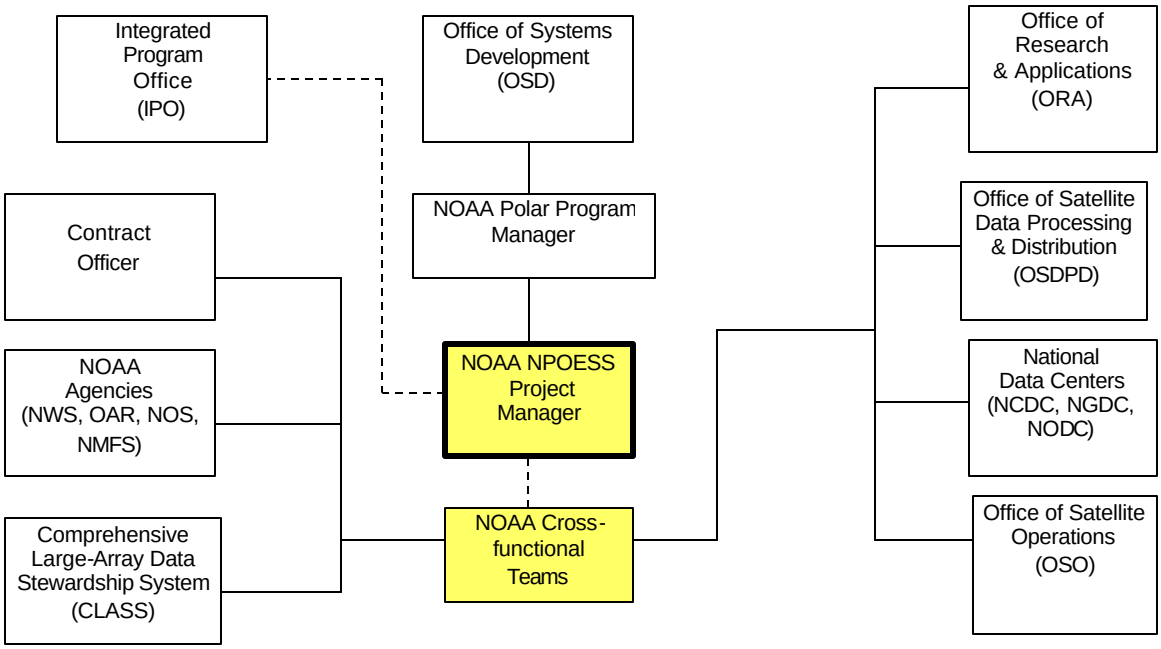

Figure 1: NDE Accountability

2.2 NDE Steering Committee

The NPOESS Data Exploitation (NDE) Steering Committee consists of executive or senior managers from across NOAA. Collectively, they represent all parts of NOAA significantly affected by NDE. The members have sufficient authority to endorse the business vision, the scientific vision, the system architectures, and the NDE plans for their parts of NOAA. The roles and responsibilities of the NDE Steering Committee include:

- Reviewing and endorsing key deliverables

- Monitoring progress and resolving conflicts (for example, balancing requirements and priorities across NOAA).
- Identifying and agreeing sponsors for sub-projects and working groups
- Acting as a sounding board on key technical issues, and providing guidance about how to handle them
- Providing initial information and guidance on how to tackle organizationally sensitive aspects of the work
- Reviewing and prioritizing strategies for NDE acquisition, development, and implementation.
- Agreeing NDE project plans and revisions to those plans

Membership Considerations: The steering committee should consist of executive managers with an interest in the results of the NPOESS Data Exploitation (NDE) project, particularly those whose organizations are most likely to be affected by it. Ideally they will be committed to making NDE a success; have a good functional knowledge of NOAA as a whole; have sufficient authority to carry through the recommendations; and have the available time to attend meetings and read background documents.

3. SCOPE OF TEAM RESPONSIBILITIES

Although staff members will participate in cross-functional teams on a temporary basis, the project relies on persistent team structures to provide continuity from task to task. The following section names each of the teams and defines the scope of their responsibilities

3.1 Management Team

3.1.1 Program Management

The office of the NOAA Polar Program Manager coordinates the NPOESS Data Exploitation (NDE) project within the overall Polar Program, including:

- Determining the Polar Program budget
- Allocating OSD resources
- Advising the NDE Project Manager of cross-project schedule and resource dependencies

3.1.2 Project Management

The NDE Project Management Team

- Provides programmatic support to NPOESS Implementation Manager
- Planning
- Status on organizational activities (e.g., procurements)/Schedules
- Budget inputs/spend plans
- New and improved algorithms generation
- Provides programmatic support to NPOESS Implementation Manager
- Provides participants to key NPOESS activities, such as
  - Program and Document Reviews
  - Key Meetings
  - Customer Forum Discussions
- Keeps the NESDIS community current on NPOESS activities/progress, including
  - Providing feedback from the community
  - Highlighting system capabilities/issues
  - Maintaining schedules/budget submittals
- Prepares and conducts regular meetings

3.2 Archive and Access Team

The Archive and Access Team is comprised of Data Center and CLASS representatives. The team

- Builds the long term archive of xDRs and NOAA-unique environmental products which conform to CLASS standards, including:
  - Physical storage
  - Web access and retrieval capability
  - Operational relationships and procedures.

3.3 Budget Analysis Team

The Budget Analysis Team

- Provides assistance to PM in drafting annual Spend Plan, tracking costs, and responding to budget questions
- Works with each NDE TEAM lead in assessing team costs and any new requirements that have a cost impact

3.4 Direct Broadcast Services Team

The Direct Broadcast Services Team

- Ensures that NESDIS continues to provide enhanced satellite broadcast services during the NPOESS era, including:
  - Search And Rescue Satellite Aided Tracking (SARSAT),
  - Data Collection System (DCS),
  - Direct Readout (DRO)
- Collaborates with the IPO on all Field Terminal developments relating to the establishment and operation of a NOAA FT Office
- Be the principal point of contact to CGMS and the civilian direct readout community on NPOESS data made available via HRD and LRD broadcasts
- Provides the necessary planning, studies and analyses in support of FT development and procurement

3.5 Documentation Team

The Documentation Team is responsible for establishing documentation administration standards in the five major areas listed below:

- Project library organization and physical structure
- Configuration management procedures to control the updating and replacement of master versions of documents
- Procedures to control confidentiality and security
- Procedures for circulating documents and for ensuring their return and/or updating on site
- Procedures to control the archiving and/or destruction of documents.

3.6 Facilities Team

The Facilities Team works with the IPO to plan the integration and test of all NPOESS ground segment equipment in NSOF.

3.7 International Affairs Team

The International Affairs Team

- Is the principal point of contact with NOAA's colleagues abroad
- Works with the Department of State (DOS) and the Department of Commerce (DOC) on import licensing and export security controls
- Seeks the necessary approvals to facilitate the exchange of information, services, and products between NOAA and its foreign partners

3.8 Instrument Characterization Team

The Instrument Characterization Team

- Provides technical assistance to the IPO for

  - Pre-launch sensor characterization and calibration
  - On-orbit calibration and performance monitoring
  - Validation of on-orbit sensor radiometric performance and calibration quality using comparisons against *in-situ* data and other external measurements
- Acts as the NOAA scientific authority and technical liaison to the IPO and other centrals on matters pertaining to sensor performance and the quality of the IDPS radiance (brightness-temperature) product

3.9 NOAA-Unique Product Development and Validation Team

The NOAA-Unique Product Development and Validation Team

- Develops the science, software systems, and hardware requirements for generating NOAA-Unique products from the Interface Data Processing Segment (IDPS) XDRs.
- Assists the PT&D team to implement routine production and monitoring of the NOAA-Unique Products.
- Provides technical assistance to the IPO for validating XDRs.
- Validates all NOAA-Unique products derived from XDRs.

3.10 NOAA Product Tailoring, Distribution, and Communications Team

The NOAA Product Tailoring and Distribution Team

- Works with the PD&V team and the user community to define intermediate products, NOAA-Unique Products, and user acceptance testing.
- Implements the means of transforming the XDRs into products and services for users of NPP and NPOESS data.
- Distributes NPOESS products to users
- Acts as liaison with the IPO and other centrals on matters relating to IDPS capabilities and the production of XDRs.

3.11 System Test and Evaluation Team

The System Test and Evaluation Team

- Represents and supports NPOESS Combined Test Force activities
- Plans and coordinates test activity between NDE and IDPS
- For NDE segment and element level testing
  - Coordinates ST&E activities with NDE TEAM leads
  - Defines ST&E scope, goals and approach
  - Plans & conducts end-to-end verifications
  - Collaborates test outcome with appropriate teams
  - Coordinates documentation (test plans, reports)

3.12 Web Site Team

The NDE Web Site team:

- Establishes and maintains an NPOESS Implementation project library on a collaboration site that allows participants to add, read, and modify documents and to participate in discussion forums.
- Provides password access to all NDE participants

- Periodically inspects the NPOESS Implementation project library and performs necessary operations to ensure the integrity of the content
- Provides assistance to NDE participants on matters relating to the collaboration site

3.13 Centrals Interface Team

The Centrals Interface Team:

- Coordinates the development and implementation of NPOESS ground segments and NPOESS operational procedures with the NPOESS contractor
- Is the principal POC between NOAA NPOESS Implementation Team and the other centrals
- Represents NOAA's interests in formulating joint-Central positions on operational matters
- Reports to NOAA on any issues raised at the Customers Forums that might affect NOAA operations

3.14 IPO Interface Team

The IPO Interface Team:

- Is the principal POC between NOAA's NPOESS Data Exploitation team and the Integrated Program Office (IPO)
- Represents NOAA's interests at IPO-sponsored meetings
- Reports to NOAA on any issues raised by the IPO that might affect NOAA planning and development

3.15 Line Office Interface Team

The Line Office Interface Team has members representing one of NDE's primary customers, a NOAA Line Office that utilize NDE products in their analytical and predictive models. The members are the single points of contact between their agencies and the NPOESS Data Exploitation project. The organizations represented in this role include:

- National Marine Fisheries (NMFS)
- National Ocean Service (NOS)
- National Weather Service (NWS)
- Office of Atmospheric Research (OAR)

In addition,

- NESDIS Chief Information Officer (CIO)

shall have a representative on the Line Office Interface Team.

The CIO Interface advises the NDE project with regard to the NESDIS CIO's policies, guidelines, standards, and procedures for acquisition, management and operation of information technology within NESDIS.

This guidance, as deemed appropriate by NDE Project Management, may encompass any aspect of Information Technology including equipment and interconnected systems used in acquisition, storage, manipulation, management, movement, control, display, interchange, or transmission of data or information, and includes computers, ancillary equipment such as development tools, software, firmware, and support services.

3.16 External Affairs Team

The mission of the External Affairs Team is to promote the NDE program by crafting and delivering messages that enhance perceptions of its viability and effectiveness.

3.17 Architecture and Infrastructure Team

The NDE Architecture and Infrastructure Team is comprised of representatives from OSDPD, OSD, and ORA with expertise in telecommunications and local area networks, operations, polar product application development, technology products for target platforms, and operating systems. The team has the following responsibilities:

- Assessment of the CEMSCS technology infrastructure's suitability and adaptability for accomplishing the NDE mission
- Development of a conceptual NDE target architecture and technology infrastructure
- Providing the NDE goal architecture and infrastructure requirements to NSOF planners
- Providing the relevant NDE goal architecture and infrastructure requirements to external entities with which NESDIS will interface during the NPP and NPOESS eras
- Evaluation, selection and implementation of the infrastructure elements (i.e., computer hardware, communications equipment, operating systems, middle ware, etc.) required in order for the NDE system to satisfy its operational performance requirements.
- Supporting the NDE Management team in the development of a technology acquisition strategy, including:
  - Evaluation of the feasibility of the POES to NPOESS transition options
  - Review of the NDE implementation plans to ensure that appropriate integration of the NDE IT architectures can be achieved and that the plans are feasible.
- Oversight of the development of the NDE system to ensure the integrity of the design, conformity to information technology best practices, and conformity to NESDIS, DOC, and NOSA standards
- Evaluation, selection and implementation of the application development tools, techniques, and methodologies to be used during the development of the NDE system

4. ADMINISTRATION

4.1 Changing Team Scope and Responsibilities

A particular team's scope of responsibilities may be altered with the approval of the members of the NDE Team as a whole. In the event that the NDE team does not agree on a proposed change, the NDE Project Manager will decide the matter.

Should the scope of teams be perceived as overlapping, or the interests of different teams perceived as being in conflict with each other, the NDE Project Manager will decide the matter.

4.2 Scheduled NDE Team Meetings

The NDE Team will meet on the last Thursday of every month.

A telephone conference network will be made available for members who cannot attend in-person.

To provide Team members with ample opportunity for review, prepared materials intended for presentation at a scheduled meeting will be submitted to the NDE team secretary (TBD) at least two work days in advance of the meeting.

APPENDICES

APPENDIX A: Direct Broadcast Services Details

- Search and Rescue Satellite Aided Tracking (SARSAT)

Cospas-Sarsat is a satellite-based distress alerting system which relays distress signals from emergency beacons to search and rescue authorities worldwide. The U.S. SARSAT system is part of the international Cospas-Sarsat System. The SARSAT Program protects life and property by providing accurate, timely, and reliable distress alert and location information to search and
rescue authorities. In order to perform its mission the SARSAT program manages and operates satellite receiving stations called local user terminals (LUTs), the U.S. mission control center (USMCC), and maintains the national registry for 406 MHz emergency beacons. The SARSAT program is also required to interface with national and international authorities on frequency matters, search and rescue issues, and satellite coordination. The SARSAT program will interface with the NPOESS program on matters dealing with SARSAT payload on-orbit commissioning, telemetry and commanding, and will provide an interface to NOAA's international partners in France and Canada.

- Data Collection System (DCS)

The Argos DCS is a satellite-based, data telemetry system that provides a global means to locate and collect environmental data from fixed and moving platforms; i.e., polar ice flows, ocean buoys, birds, mammals, etc. in near-real time. The Argos DCS supports operational and research related environmental applications, e.g. meteorology, oceanography and protection of the environment, with the majority of users being government/non-profit agencies and researchers. Argos DCS customers are engaged in over 1000 programs operating approximately 15,000 data collection platforms in 72 counties. These programs provide critical data for the protection of life and property from events such as hazard monitoring i.e. volcanoes, predicting climate change i.e. El Nino onset and support for search and rescue. The Argos DCS program was established through a Memorandum of Understanding (MOU) with France in the mid 1970's with subsequent MOU's extending this cooperative effort into the NPOESS era. NOAA for the U.S. and the Centre Nationale d'Etudes Spatiales (CNES) for France are the lead agencies for this international cooperative agreement and have joint oversight responsibility for the implementation and operation of the program. The Argos DCS program will interface with the NPOESS program on matters dealing with the DCS payload integration and on-orbit commissioning, telemetry and commanding, data pre-processing and distribution, and will provide an interface to NOAA=s international partners in France.

-Direct Readout (DRO)

Satellite Direct Readout service is used to distribute raw or minimally preprocessed satellite data directly from the satellite to anyone anywhere in the world in real or near-real time. The NOAA/NESDIS Direct Readout Program is the primary operating level interface with civil sector users of data directly transmitted to field terminals from NOAA operational environmental satellites. The Direct Readout Program will coordinate with the Integrated Program Office and associated contractors on the NPOESS Program to implement and manage the NOAA Field Terminal Program Office. This Office is responsible for

establishing and maintaining an automated Field Terminal registry that will be used to facilitate notifying organizations and individuals with Field Terminals of software changes and program updates. The Field Terminal Program Office will coordinate with the NPOESS Program and appropriate federal agencies to establish procedures for issuing and maintaining encryption keys for Direct Readout data access during data denial. The Direct Readout Program will also perform a liaison service between NESDIS offices and the user community to provide information on obtaining government provided field terminal software and on independently acquiring ground station hardware, as well as distribute publications, support conferences, conduct educational outreach activities, and issue bulletins and information notes on satellite operations and instruments affecting DRO services.

APPENDIX B: Approval Page

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APPENDIX C: Document Change History

1. Initial Draft document for review - July 2003
2. Changed team name from “Product Tailoring & Distribution” to “Product Tailoring, Distribution, and Communications” - August, 2003
3. Changed “Instrument Calibration and Validation” to “Instrument Characterization” – October, 2003
4. Extracted the Organization Chart as a separate document because of the need to perform frequent updates. November, 2003
5. Added “External Affairs” team – November, 2003
6. Merged “Program Management,” “Project Management,” and “Project Support” in one “Management Team”, December, 2003
7. Merged four separate interface teams (NOS, NWS, NMFS, and OAR) into a single “Line Office Interface Team”, December 2003
8. Added the CIO Interface to the Line Office Interface Team, December 2003
9. Added section 3.17, Architecture and Infrastructure Team, February 2004
10. Added section 2.2, NDE Steering Committee, February 2004